



**National Aeronautics and Space Administration
Office of Equal Opportunity Programs
Minority University Research and Education Division**

**FY 2000 NASA RESEARCH ANNOUNCEMENT
(NRA-00-OEOP-3)**

INSTITUTIONAL RESEARCH AWARDS (IRA)

**Release Date: October 29, 1999
Notice of Intent Deadline: January 3, 2000
Proposals Deadline: February 1, 2000
Selection Announcement: April 3, 2000**

10/28/1999

INQUIRIES

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Solicitation Availability

A copy of the solicitation and required forms are available electronically via the Internet at the following address: <http://mured.alliedtech.com>

Important Program Dates:

NASA Research Announcement Released:	October 29, 1999
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NASA Research Announcement Institutional Research Awards (IRA)

NASA is dedicated to continuing its commitment to achieving a broad-based, competitive aerospace research capability among the nation's Historically Black Colleges and Universities (HBCUs) and Other Minority Universities (OMUs), which include Hispanic Serving Institutions (HSIs) and Tribal Colleges and Universities (TCUs). Partnerships between NASA and the HBCUs and OMUs provide an enormous opportunity for NASA to contribute to society by increasing the representation of underrepresented minorities in education, research, and careers in mathematics, science, engineering, and technology-related fields.

The NASA Institutional Research Awards program solicits basic and applied research and analysis from the faculty and students of HBCUs and OMUs. The research must be relevant to one or more of the four Strategic Enterprises described in NASA's Strategic Plan. The Strategic Enterprises are Earth Science, Aero-Space Technology, Human Exploration and Development of Space, and Space Science. These Strategic Enterprises encompass a broad range of traditional science and engineering disciplines to accomplish NASA's mission. Collaborative partnerships with NASA Centers, the Jet Propulsion Laboratory (JPL), other government agencies, industry, or NASA-funded projects at other universities are strongly encouraged. (See Appendix C – NASAs Top 25 Funded Institutions of Higher Education and Contractors)

NASA will award approximately six awards based on merit review. Each award will consist of a cooperative agreement in support of the proposed research activities. Funding beyond the first year is based on an annual evaluation of documented progress, the availability of funds and the amount of funds reported in the Agency's Financial and Contractual Status (FACS) Report as unexpended at the end of each year's period of performance.

This NASA Research Announcement (NRA) is responsive to all Federal mandates related to HBCUs and OMUs. **Proposals are due by 4:30 p.m. (EST) February 3, 2000. Any proposals received after that time will not be accepted.**

We appreciate your interest and participation in this Minority University Research and Education Program.

George E. Reese
Associate Administrator
Office of Equal Opportunity Programs

INSTITUTIONAL RESEARCH AWARDS

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Institutional Research Awards

I. Introduction

The purpose of NASA's Institutional Research Awards is to solicit basic and applied research and analysis from the faculty and students of Historically Black Colleges and Universities (HBCUs) and Other Minority Universities (OMUs), which include Hispanic Serving Institutions (HSIs) and Tribal Colleges and Universities (TCUs). As a result of participating in this program, HBCUs and OMUs will: 1) contribute directly to NASA research and human resources requirements; 2) support the development of the institution's NASA-related research capabilities; and 3) ultimately, increase the number and percentage of underrepresented minorities who are U.S. citizens with advanced degrees in NASA related fields.

Awards for this announcement will be cooperative agreements, therefore, collaboration with NASA is a must (See Section V.B, page 9, for additional information). Collaboration with other universities and/or industry is strongly encouraged. Universities, industry, and other government agencies play major roles in carrying out much of NASA's work, and in conducting research and development work in related areas. Carefully constructed partnerships often lead to substantial benefits for all parties involved. The HBCU or OMU might gain access to special purpose facilities, exposure to new work areas, and numerous other resources. Likewise, the partners will benefit from the wealth of knowledge and skills of the faculty and gain access to some of the nation's brightest students.

However, the collaborations must enhance the minority institution's (MI) ability to achieve its objectives, to leverage significant sources of additional funding, and to obtain essential services not available on the campus.

II. Goals and Objectives

The goals of this program are to:

- foster cultural diversity in the NASA-sponsored research community by supporting faculty and students at HBCUs and OMUs;
- enhance the capability of minority institutions to provide a quality learning and research environment; and
- increase opportunities for minority institutions to participate in and benefit from federal programs, while achieving NASA's mission.

Program objectives are to:

- establish significant, multi-disciplinary scientific, engineering, and/or commercial research capability at the HBCU or OMU that contribute substantially to the programs of one or more of the four Strategic Enterprises (Earth Science, Aero-Space Technology, Space Science, and the Human Exploration and Development of Space) described in NASA's Strategic Plan;
- improve the number and the percentage at which U.S. citizens who historically have been underrepresented in NASA-related fields are awarded advanced degrees in such fields at their own university, and/or rates at which their undergraduate degree recipients go on to earn advanced degrees in such fields at other institutions; and
- gain more support from sources outside NASA Minority University Research and Education Programs (MUREP) by aggressively pursuing additional funding opportunities offered by NASA Strategic Enterprises, industry, and other funding agencies.

III. Award Size and Duration

It is anticipated that at least six proposals will be awarded based on merit review. Each award will consist of a cooperative agreement of no more than \$500,000 per year for up to 4 years in support of the proposed research activities. Institutions receiving a total of \$500,000 or less in NASA research funding during FY 1999 (October 1, 1998 through September 30, 1999) should encourage relevant departments to submit a proposal.

Continuation of funding for years two through four is predicated on the availability of funds and documented progress reported annually, including the submission of annual outcomes and student tracking reports. Failure to make adequate progress in any one year will result in termination of the award and additional funding will not be provided. Further, continuation of funding may be reduced if cost reporting indicates a significant level of unexpended funding.

IV. Eligibility Requirements

A. Institutions

All proposals must originate from one of the following U.S. colleges or universities, designated by the Department of Education as a minority institution in 1999:

1. Must be an accredited minority college or university with enrollment of a single underrepresented minority group or the combination of underrepresented minority groups that exceeds 50 percent of the total student enrollment as defined in the Higher Education Act as amended (see 20 USC 1135d and 34 CFR 637.4b);

2. Must be a Hispanic-Serving Institution under Title III of the *Higher Education Act of 1965*, as amended [See 20 USC 1059 ©; Public Law 102-325, Section 306, July 22, 1992]; and/or
3. Must be a Historically Black College or University under Title III of the *Higher Education Act of 1965*, as amended (see 34 CFR 608.2); and/or
4. Tribal colleges and universities must be cited in Section 532 of the Equity in Educational Land Grant Status October of 1994; Tribally Controlled Community College Assistance Act of 1978; or the Navajo Community College Assistance Act of 1978, Public Law 95-471.

These institutions must also:

- Offer graduate degrees in science, mathematics, engineering, or technology disciplines.
- Receive a total of \$500,000 or less in NASA awards in FY 1999 (October 1, 1998 through September 30, 1999)

Only Institutions that meet the above criteria can be the recipient of a NASA IRA award. A list of the Department of Education minority institutions can be accessed at:

<http://www.ed.gov/offices/OCR/99minin.html> .

Any arrangements and/or agreements to have the award administered by a third party is between the awardee and the third party and does not require NASA's involvement or approval.

NOTE: Institutions that are current or past recipients of NASA MURED IRA (Research), University Research Center (URC), or Partnership Awards for the Integration of Research into Undergraduate Education (PAIR) awards are not eligible to apply.

B. Principal and Co-Principal Investigators

Investigators must meet all of the following criteria at the time the proposal is submitted:

- 1) Must be a tenure or tenure-track faculty member of an eligible institution, or a full time faculty member of a TCU;
- 2) Must have a Ph.D. in a science, mathematics, engineering or technology discipline applicable to NASA research needs; and
- 3) Must be a U.S. citizen.

A maximum of 50 percent of the annual salary for the principal investigator, co-principal investigator, and senior researchers may be charged to this award.

C. Students

A minimum of 25 percent of the 4 year total must be allocated (including fringe benefits and indirect cost) for undergraduate and graduate students who have been traditionally underrepresented in mathematics, science, and technology-related education and professions. No student may receive more than \$15,000 per award year. All students must be U.S. citizens.

V. Narrative Guidelines

The project description should reflect the unique combination of the institution's interests and capabilities. It should clearly and concisely justify the requested NASA support. Important components are as follows:

- (1) **Relationship to NASA's Objectives** – Describe the relevance of the proposed work to the objectives of the proposed primary and other NASA Enterprise(s), including the potential contribution of the effort to NASA's mission. Describe the plans and expectations for long-term growth.
- (2) **Technical** -- Provide a technical program plan that describes in detail the proposed specific research objectives; the methods, approaches, concepts, or advanced technologies to be used; and the potential impact of the proposed research to its field. Describe the scientific qualifications, capabilities, and experience of the proposed Principal Investigator and all other key personnel who are proposing to help achieve the proposal's objectives. Describe the proposing institution's capabilities, related experience, facilities, techniques, or unique combinations of these that are integral factors for achieving the proposal's objectives. Indicate the relationship of the proposed work to the state-of-the-art in the field. If applicable, describe any plans for technology transfer or commercial product development; and present a partnership plan that describes any proposed collaborations with industry, other universities, NASA, and/or government agencies and indicate how they will enhance the expected outcomes.
- (3) **Management and Evaluation** – Present the proposed organizational and management structure of the IRA, including: a) reporting structure of the IRA within the university; b) leadership qualities of the proposed IRA Director; c) initial personnel; d) future staff positions committed to the program; and e) the approach(es) to building a research infrastructure that will support researchers, contribute to increasing the number and percent of minority students who have been traditionally underrepresented in NASA-related fields, meet the objectives of the IRA and support the educational goals of the university. Describe the plans for interaction and dissemination of information among project investigators. Describe in detail the metrics that will be used to evaluate outcomes, the means by which the necessary information will be acquired and aggregated, and any other means by which the project will be evaluated. Describe the plans for national dissemination of results.

- (4) Human Resources Development** – Present the strategy for increasing the number of degrees awarded to U.S. citizens who historically have been underrepresented in NASA-related fields. Particular attention should be paid to the contribution that the project will make directly or indirectly to advanced degree production, and to the means by which the HBCU or OMU will track that contribution.

Include detailed information on student involvement and production. The following baseline performance must be included as part of your proposal (See Appendix F – Form F5):

Past Performance

Chart 1 – Student Enrollment and Degrees Awarded in Departments Covered by the Proposed Research in Academic Year 1998/99

Planned Performance

Charts 2-5 – Projected Increase in Enrollment and Degrees Awarded for Each Academic Year Covered by the Planned Award

For planning performance for your proposal, you must only report the total number and percent and the total projected increases in number and percent by the broad term "minority." However, you will be expected to report annual outcomes for each minority group.

- (5) Resources** – Describe the resource plan for the four year award period, indicating the approach to distributing funds over the four years and among various proposed activities. Indicate any measures that have been taken to gain cost savings or efficiencies. Describe any existing facilities and equipment available to the project and justify the need for any additional major equipment purchases or facilities upgrades. Present the university's commitment of resources to the project, including such items as staffing, facilities, laboratories, and waivers of indirect costs. Describe the relationship of the proposed project to the university's long-term strategic plan for institutional development. Present the plan for continuing work beyond the initial 4 years and achieving self-sufficiency.

Note: The Project Narrative is restricted to a maximum of 15 pages. Appended material (other than required forms and certificates) will not be accepted.

B. Designated Research Areas and Collaborations

Applicants must propose to conduct research in a science, mathematics, engineering or technology discipline that supports NASA's Strategic Enterprises and is related to NASA's mission. The NASA Centers and JPL, in collaboration with government, industry, and other universities with NASA-funded projects, are responsible for implementing many of the plans, programs, missions, and activities established by the Strategic Enterprises. The Center's work areas are defined by the primary mission and Center of Excellence responsibilities assigned to the respective Center. Additional information on the Strategic Enterprises, NASA Centers, and JPL can be found on the home pages listed in Appendix B.

Services provided by NASA Centers or JPL will be identified as NASA responsibilities in the cooperative agreement. Proposers should contact in advance the NASA Center or JPL from which services will be requested in order to ascertain the availability and anticipated cost of such services. All costs incurred by JPL and NASA Centers for the use of facilities and contracted technical support come out of IRA program funds. Therefore, to the extent that the performance of NASA responsibilities under the cooperative agreement entails the incurrence of these costs, the amount of funding made available to the recipient will be reduced accordingly. Costs incurred by NASA Centers for civil service salaries, travel, and in-house research will not affect the funding of the cooperative agreements.

On-line web links to the Strategic Enterprises can also be found at the following URL:

<http://mured.alliedtech.com/muredhomepage/nasa.asp>.

The NASA and Enterprises Strategic Plans can be accessed at URL:

<http://www.hq.nasa.gov/office/codez/plans.html>

VI. Proposal Guidelines and Submission Instructions

General guidelines for proposal preparation are given in Appendix D, Instructions for Responding to NASA Research Announcements. However, certain sections listed in Appendix D must be modified to meet the intent of the IRA program. The following information augments the descriptions in Appendix D.

A. Proposal Guidelines

1. If substantial collaborations with NASA Centers, universities, industry and other government agencies are intended, include summary statements identifying each partner, their contribution, and the name and signature of the responsible officer or manager at the institution. The summary statements are limited to 2 pages.
2. The Length section of Appendix D (Section P) is modified to require that the proposal narrative or investigation description be limited to 15 pages. Reviewers will be instructed and obligated to review only the first 15 pages of the description.
3. The original and five copies of the proposal must be received by NASA Headquarters by the specified deadline. A proposal should be no more than 35 pages in length, using standard-size paper (8.5x11), one-inch margins (top, bottom, left and right), and 12-point font. Certifications, appendices, forms, and figures (e.g., depicting research schedule) are desired but must fit within the 35-page limit. To facilitate the recycling of proposals after review, proposals should be submitted on plain, white paper only. The use of cardboard stock, plastic covers, colored paper, etc., is prohibited.

B. Budget Guidelines

The "Proposed Costs" discussed in Section (K) of Appendix D is supplemented by the following information:

1. The proposal should contain sufficient cost detail and supporting information to facilitate a speedy evaluation and award. Dollar amounts proposed with no explanation (e.g., Equipment: \$5,000, or Labor: \$23,000) may cause delays in funding should the proposal be selected. The proposed costing information should be sufficiently outlined to permit the Government to identify cost elements for evaluation purposes. Generally, the Government will evaluate costs in terms of their reasonableness and acceptability. Each category should be explained. Offerors should exercise prudent judgment since the amount of detail necessary varies with the complexity of the proposal.
2. No more than 40 percent of the total program personnel and other administrative cost can be attributed to NASA. Direct labor costs should be separated by titles or disciplines such as Principal Investigator, clerical support, along with the percent of time. Salaries should be based on the current annual documented salary. Indirect costs should be explained to allow the Government to understand the basis of the estimates.
3. With regard to other costs, each significant category should be detailed, explained, and substantiated. For example, proposed equipment purchases should not exceed 25 percent of the total award and should specify the type of equipment, number of units, and unit cost. Requested travel allowances should include the number of trips, duration of each trip, air fare, per diem, rental car expenses, etc.
4. Indirect costs are included in the total cost (not to exceed \$500,000) to NASA.

C. Proposal Format, Content, and Page Limitation

The proposal should be submitted according to the order listed below and should not exceed 35 pages including certifications, forms, and appendices. Each proposal should adhere to the table guidelines for the maximum number of pages for that section.

Proposal Content	Page Guideline	Form Number and References
1. Proposal Cover Page The proposal cover sheet must be signed by an institution official who is authorized to certify institutional support and sponsorship of the investigation and of the management of the proposal. The authorizing institutional signature on the Proposal Cover Page certifies that the proposing institution has read and is in compliance with these certifications.	1	Appendix F Form F-1
2. Table of Contents	1	
3. Proposal Data	1	Appendix F Form F-2
4. Proposal Abstract Include an abstract (200-300 words) of proposed research, describing the objectives and method of approach. Include how the research relates to NASA missions and the major accomplishments planned for the performance period.	1	Appendix F Form F-3
5. Certification of Institution and Faculty Eligibility Form	2	Appendix F Form F-4
6. Certifications Regarding Lobbying, Debarment, Suspension and Other Responsibility Matters and Drug-Free Workplace Requirements Form This form does not have to be submitted with the proposal.	DO NOT INCLUDE THIS FORM	Appendix E
8. Proposal Narrative (Relationship to NASA's Objectives, Technical, Management and Evaluation, Human Resources Development, and Resources) The narrative should include the PI's research, evaluation, and transition plans. Plans should include objectives that are specific, measurable, achievable, and realistic within a stated time period. Include a detailed plan describing participation of students who are U.S. citizens and have been historically underrepresented in the MSET careers and education.	10-13	Section V

Proposal Content	Page Guideline	Form Number and References
Detail how these students will be tracked from enrollment through completion of their degrees.		
9. Budget Request Summary Summarize budget by year for each of the 4 years. A minimum of 25 percent of the total budget must directly support minority students who are U.S. citizens. Student support should be categorized under the “Other” section (2.f) of the budget form.	6 - 8	Appendix F Form F-6
10. Equipment List	1	Appendix F Form F-7
11. Principal/Co-Investigator Research Qualifications Submit proposers vitae, including academic record and listing of relevant publications. A single-page bibliography including no more than five publications relevant to the proposed research.	3-10	No more than 2 pages per investigator

Please Note: Proposals must not exceed 35 pages, including certifications, forms, and appendices.

D. Proposal Submission

To assist in expediting the evaluation, selection and award process, prospective proposers are requested to submit certain forms electronically. Forms that may be prepared and submitted electronically are the Cover Page, Form F-1; Proposal Data, Form F-2; Proposal Abstract, Form F-3; Certification of Institution and Principal Investigator Eligibility, Form F-4; and Budget Request Summary, Form F-6.

After submitting your information online, you can use the Print Hardcopies feature to include the completed forms in your proposal. (Tip: Either copy and paste into your original text file or print hardcopies to include in the proposal document.) The on-line forms will be available through January 31, 2000 and can be accessed at:

<http://www.hq.nasa.gov/office/codee/mured.html>

Hardcopies of the proposals are required and are considered the official time stamp of submission. There is also an optional feature to electronically upload your proposal from the Proposal Submission System. However, if you use this option you must still submit the proposal in hardcopy.

All hardcopy proposals must be received at NASA Headquarters **no later than 4:30 p.m. (EST), February 3, 2000** to be considered for FY 2000 awards. **Proposals received after this time are ineligible for consideration.** This supersedes Section (R) of the Instructions for Responding to NASA Research Announcements listed in Appendix D.

The proposal may be delivered by regular mail, certified mail, or commercial delivery. Avoid using registered mail, as this may delay the log-in time of arrival. To ensure identification of proposals sent through regular mail, please mark your proposal in an appropriate place with the following identifier in large bold letters: **IRA PROPOSAL NRA 00-OEOP-3**. Acknowledgment of the receipt of proposals will be e-mailed within 14 calendar days of the proposals due date.

The original and five (5) copies of the proposal must be sent to:

Mr. John E. Malone
NRA 00-OEOP-1
Code EU
NASA Headquarters
Washington, D.C. 20546-0001

For Commercial Delivery (e.g. Federal Express or courier):

Mr. John E. Malone
NRA 00-OEOP-1
Code EU
Attn: Receiving and Inspection (rear of building)
300 E Street, S.W.
Washington, D.C. 20024-3210

VII. Proposal Compliance, Evaluation and Awards Process

A. Proposal Compliance

All proposals must comply with the general requirements of the NRA. Upon receipt, proposals will be reviewed for compliance. This includes:

1. Submission of complete proposals on or before the due date specified in Important Program Dates on Page 2.
2. Submission of a proposal from an eligible minority institution, specified in the Eligibility Requirements (Section IV).
3. Submission of proposals that are no more than 35 pages in length.
4. Submission of a budget that is within guidelines specified in this NRA and is for a funding period not exceeding four years in duration.
5. Submission of all other appropriate forms as required by this NRA (See Appendix D).

Note: At NASA's discretion, non-compliant proposals may be withdrawn from the review process and returned to the proposer without further review.

B. Evaluation Criteria

Proposals will be evaluated on the following five criteria: Relevance to NASA, Intrinsic Merit, Management Approach, Human Resource Development, and Proposed Cost. The criteria are listed in descending order of importance. For example, Relevance to NASA is more important than Intrinsic Merit and these two together are more important than the other three. Management Approach and Human Resources Development are of approximately equal importance and each is more than Proposed Cost. These criteria supersede those contained in Appendix D.

1. **Relevance to NASA.** Relevance of the proposed work to the specific objectives of the proposed primary or other NASA Enterprises(s), including consideration of the potential contributions of the effort to the NASA Strategic Plan and NASA missions. Potential for long-term growth.
2. **Intrinsic Merit.** Intrinsic merit of the work proposed, including consideration of the following factors:
 - The overall scientific and/or technical merit of the proposal and/or unique and innovative methods, approaches, concepts, or advanced technologies

demonstrated by the proposal, and the potential impact of the proposed research to its field;

- The qualifications, capabilities, and experience of the proposing PI and all other personnel who are proposing to help achieve the proposal's objectives;
- The proposing institution's capabilities, related experience, facilities, techniques, or unique contributions that are integral factors for achieving the proposal's objectives; and
- The overall standing of the proposal against the known state of the art.

3. **Management Approach.** Extent to which the proposed management structure and team will lead to a well-coordinated, efficiently-managed, and productive effort. Leadership qualities of the IRA Director and management team. Documented competence of the management team in regard to development, coordination, implementation, and evaluation of the proposed program. Adequacy of plans for interaction and dissemination of information among project investigators. Feasibility and utility of the key metrics, the plans for acquiring and aggregating data, the pre-award baseline to which data will be compared, and any other means by which the institution's progress will be evaluated. Extent to which these plans will provide a clear picture of progress towards success.
4. **Human Resource Development.** Extent to which the institution will contribute to increasing the number and percentage of degrees awarded to U.S. citizens who have been historically underrepresented in NASA-related fields, and the extent to which the proposed effort will contribute directly to the recruitment and retention of more students in mathematics, science, engineering, and technology courses. Evidence of previous academic year enrollments and degrees awarded and the adequacy of increasing the number and percent of underrepresented minorities, who are U.S. citizens, significantly above the pre-award performance.
5. **Proposed Cost.** Appropriateness of the budget, including reasonableness of proposed cost and cost elements to further IRA objectives. Evidence of adequate and committed institutional assets, including laboratory equipment and facilities, administrative resources, and cost sharing. The extent to which the proposed project is an integral part of the university's long-term strategic plan for institutional development, regardless of the outcome of this solicitation. Describe the availability of leveraged funds from other sources. Present a plan for achieving self-sufficiency beyond year four.

No more than 40 percent of the total program personnel and other administrative cost can be attributed to NASA. Equipment cost cannot exceed 25 percent of the budget, and a minimum of 25 percent of the total budget must be allocated to students (no more than \$15,000 per student per year).

C. Evaluation Technique

Proposals will be evaluated on the basis of competitive merit peer review by a panel of representatives of external reviewers and reviewers from the NASA Centers/JPL and the Strategic Enterprises. The panel will rank the proposals and make selection recommendations to the Selection Official, who is the Associate Administrator for the Office of Equal Opportunity Programs. Selection announcements will be made in February 2000.

Discussions of proposed research with appropriate NASA technical personnel before submission of a proposal is strongly encouraged. A list of appropriate NASA Center and JPL contact persons is provided in Section VIII.

D. Notice of Intent

To assist in the evaluation and the selection and award processes, prospective proposers are requested to submit a Notice of Intent (NOI) electronically, either on-line or by e-mail. The on-line form can be accessed at <http://www.hq.nasa.gov/office/codee/mured.html>. E-mail the following information to mured@hq.nasa.gov with "IRA 00 NOI" as the subject:

Strategic Enterprise:

Brief (short paragraph) description or research:

Institution:

PI Name:

PI Address:

PI Phone:

PI Fax:

PI e-mail:

E. Contact for Questions

If you have any questions pertaining to this solicitation, please call the appropriate NASA official listed at the beginning of this announcement, under Inquiries, or you may visit our Frequently Asked Questions (FAQ) page located at: <http://mured.alliedtech.com>

VIII. Contact List for Technical and Scientific Inquiries

A. NASA Headquarters Contact Persons

Ms. Darlene Boykins
Aerospace Research Division
Office of Aeronautics
Room 6M33
Mail Code RT
(202) 358-4743
FAX: (202) 358-3557

Ms. Debra Spears
Life Science Division
Office of Life & Microgravity
Science Applications
Room 8R31
Mail Code UL
(202) 358-1952
FAX: (202) 358-4168

Dr. Jeffrey Rosendhal
Assistant Associate Administrator,
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(202) 358-2470
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Ms. Alotta Taylor
External Liaison Office
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(202) 358-2534
FAX: (202) 358-2803

Dr. Jack Kaye
Science Division
Office of Earth Science
Room 5P13
Mail Code YS
202/358-0757
FAX: 202/358-2770

B. NASA Center Contact Persons

Ames Research Center

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Goddard Space Flight Center

Dr. Dillard Menchan
301/286-7348
Fax: 301/286-0298

Dryden Flight Research Center

Ms. Erma Cox
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Fax: 805/258-2800
ermacox@mail.dfrc.nasa.gov

Jet Propulsion Laboratory

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Richard.L.Ashe@cc2mhb.jpl.nasa.gov

Johnson Space Center

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Kennedy Space Center

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Rmckinney@ksc.nasa.gov

Glenn Research Center

Mr. Robert Lawrence

216/433-2921

Fax: 216/433-5266

Robert.F.Lawrence@grc.nasa.gov

Marshall Space Flight Center

Mr. Willie Love

205/544-0088

Fax: 205/544-2411

Willie.Love@msfc.nasa.gov

Stennis Space Center

Ramona Travis

601/688-3830

Fax: 601/688-7499

Armond.T.Joyce@ssc.nasa.gov

Langley Research Center

Mr. Roger Hathaway

757/864-3312

Fax: 757/864-8835

r.a.hathaway@larc.nasa.gov

IX. Notification

Selection announcements are anticipated in April 2000. Principal Investigators will be notified of any changes in this schedule by e-mail. Selection notification to the institution official will be in writing. Others will be notified by e-mail.

X. APPENDICES

APPENDIX A

NOTICE OF INTENT

The following descriptions are provided as supplementary information to assist proposers in identifying NASA Grant and Cooperative Agreement categories. **This solicitation is for research proposals only.**

Research proposals identify methods to accomplish a NASA objective by stimulating or supporting the acquisition of knowledge or understanding of the subject or phenomena under study; or that attempts to determine and exploit the potential of scientific discoveries or improvements in technology, materials, processes, methods, devices, or techniques.

Education proposals address one or more of the following areas:

- ◆ Capturing student interest and/or improving student performance in science, mathematics, technology, or related fields;
- ◆ Supporting national education reform movements;
- ◆ Conducting pilot programs or research to increase participation and/or to enhance performance in science, mathematics, or technology education at all levels; and
- ◆ Developing instructional materials (e.g., teacher guides, printed publications, computer software, and videotapes) or networked information services for education.

Training proposals provide scholarships, fellowships, or stipends to students, teachers, and/or faculty to enhance and strengthen their knowledge, skills, or abilities in science, mathematics, engineering, or technology in NASA related research.

APPENDIX B.**WORLD WIDE WEB ADDRESSES**

1. **NASA Strategic Plan** World Wide Web address: <http://www.hq.nasa.gov/office/nsp>
2. **Minority University Research and Education Division** World Wide Web address: <http://www.hq.nasa.gov/office/codee/mured.html>
3. **NASA Strategic Enterprises:**

Enterprise/Code	Web Address
Earth Science/Code Y	http://www.earth.nasa.gov
Aero-Space Technology/Code R	http://www.hq.nasa.gov/office/aero
Human Exploration and Development of Space (HEDS)/ Code U - Life and Microgravity Sciences Code M - Space Flight	http://www.hq.nasa.gov/osf/heds
Space Science/Code S	http://spacescience.nasa.gov

4. NASA Centers/JPL Center of Excellence and Mission Areas :

Center	Designated Center of Excellence Area of Responsibility	Mission Area
Ames Research Center http://www.arc.nasa.gov/	Information Technology	Aviation Operations Systems and Astrobiology
Dryden Flight Research Center http://www.dfrc.nasa.gov	Atmospheric Flight Operations	Flight Research
Goddard Space Flight Center http://www.gsfc.nasa.gov/	Scientific Research	Earth Science and Physics and Astronomy
Jet Propulsion Laboratory http://www.jpl.nasa.gov/	Deep Space Systems	Planetary Science and Exploration
Johnson Space Center http://www.jsc.nasa.gov/	Human Operations in Space	Human Exploration and Astro Materials
Kennedy Space Center http://www.ksc.nasa.gov/	Launch and Payload Processing Systems	Space Launch
Langley Research Center http://www.larc.nasa.gov/	Structure and Materials	Airframe Systems and Atmospheric Science
Glenn Research Center http://www.grc.nasa.gov/	Turbomachinery	Aeropropulsion
Marshall Space Flight Center http://www.msfc.nasa.gov	Space Propulsion	Transportation Systems Development and Microgravity
Stennis Space Center http://www.ssc.nasa.gov/	Rocket Propulsion Test	Propulsion Test

APPENDIX C -- LIST OF NASA'S TOP 25 FUNDED INSTITUTIONS OF HIGHER EDUCATION AND CONTRACTORS)

1. Johns Hopkins University
2. Stanford University
3. University of Colorado, Boulder
4. University of Maryland at College Park
5. Massachusetts Institute of Technology
6. University of California Berkeley
7. New Mexico State University, Las Cruces
8. California Institute of Technology
9. University of Arizona
10. Wheeling Jesuit University
11. University of Alabama, Huntsville
12. Baylor College of Medicine
13. University of Alabama, Birmingham
14. Columbia University
15. University of Washington
16. University of California Los Angeles
17. University of Wisconsin, Madison
18. University of Hawaii
19. Utah State University
20. University of California, San Diego
21. Pennsylvania State University
22. University of Alaska Fairbanks
23. University of New Hampshire
24. University of Texas, Austin
25. University of Iowa

CONTRACTORS

1. Boeing Company
2. United Space Alliance LLC
3. Lockheed Martin Corporation
4. McDonnell Douglas Corporation
5. Thiokol Corporation
6. Allied Signal Technical Services
7. Boeing North American Inc.
8. Lockheed Martin Engineering and Science Company
9. TRW Inc.
10. Computer Sciences Corporation
11. EG&G Florida Inc.
12. Hughes Aircraft Co.
13. Lockheed Martin Aerospace Corp.
14. Hughes Information Tech. Corp.
15. United Technologies Corp.
16. Boeing Commercial Airplane Group
17. Science Applications International Corp.
18. Ball Aerospace & Technical Corp.
19. Johnson Controls World Services
20. General Electric Co.
21. U S B I Booster Production Co.
22. Orbital Sciences Corp.
23. I T T Corp.
24. Hamilton Standard Space Systems
25. Johnson Engineering Corp.

Appendix D

INSTRUCTIONS FOR RESPONDING TO NASA RESEARCH ANNOUNCEMENTS NASA SUPPLEMENTARY REGULATIONS (SEPTEMBER 1999)

A. General.

(1) Proposals received in response to a NASA Research Announcement (NRA) will be used only for evaluation purposes. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a pre-award synopsis published for individual proposals.

(2) A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

(3) NRAs contain programmatic information and certain requirements which apply only to proposals prepared in response to that particular announcement. These instructions contain the general proposal preparation information which applies to responses to all NRAs.

(4) A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded in response to an NRA. NASA will determine the appropriate instrument. Contracts resulting from NRAs are subject to the Federal Acquisition Regulation and the NASA FAR Supplement. Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NPG5800.1).

(5) NASA does not have mandatory forms or formats for responses to NRAs; however, it is requested that proposals conform to the guidelines in these instructions. NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible and be submitted on the proposers' most favorable terms.

(6) To be considered for award, a submission must, at a minimum, present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the

submitting organization; not merely offer to perform standard services or to just provide computer facilities or services; and not significantly duplicate a more specific current or pending NASA solicitation.

B. NRA-Specific Items. Several proposal submission items appear in the NRA itself: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information. Items included in these instructions may be supplemented by the NRA.

C. The following information is needed to permit consideration in an objective manner. NRAs will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

D. Transmittal Letter or Prefatory Material.

- (1) The legal name and address of the organization and specific division or campus identification if part of a larger organization;
- (2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;
- (3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;
- (4) Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiation;
- (5) Identification of other organizations that are currently evaluating a proposal for the same efforts;
- (6) Identification of the NRA, by number and title, to which the proposal is responding;
- (7) Dollar amount requested, desired starting date, and duration of project;
- (8) Date of submission; and
- (9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

E. Restriction on Use and Disclosure of Proposal Information. Information contained in proposals is used for evaluation purposes only. Offerors or quoters should, in order to maximize protection of trade secrets or other information that is confidential or privileged, place the

following notice on the title page of the proposal and specify the information subject to the notice by inserting an appropriate identification in the notice. In any event, information contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

Notice

Restriction on Use and Disclosure of Proposal Information

The information (data) contained in [insert page numbers or other identification] of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

F. Abstract. Include a concise (200-300 word if not otherwise specified in the NRA) abstract describing the objective and the method of approach.

G. Project Description.

(1) The main body of the proposal shall be a detailed statement of the work to be undertaken and should include objectives and expected significance; relation to the present state of knowledge; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the plan of work, including the broad design of experiments to be undertaken and a description of experimental methods and procedures. The project description should address the evaluation factors in these instructions and any specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Subcontracting significant portions of a research project is discouraged.

(2) When it is expected that the effort will require more than one year, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should be on the first year of work, and the description should distinguish clearly between the first year's work and work planned for subsequent years.

H. Management Approach. For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and arrangements for ensuring a coordinated effort should be described.

I. Personnel. The principal investigator is responsible for supervision of the work and participates in the conduct of the research regardless of whether or not compensated under the

award. A short biographical sketch of the principal investigator, a list of principal publications and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project.

Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry-university cooperative arrangements should be described.

J. Facilities and Equipment.

(1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use. Include evidence of its availability and the cognizant Government points of contact.

(2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization is a feasible alternative. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for research and non-research purposes should be explained.

K. Proposed Costs (U.S. Proposals Only).

(1) Proposals should contain cost and technical parts in one volume: do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., principal investigator, other scientific and engineering professionals, graduate students, research assistants, and technicians and other non-professional personnel). Estimate all staffing data in terms of staff-months or fractions of full-time.

(2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self-evident. List estimated expenses as yearly requirements by major work phases.

(3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 1831 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

(4) Use of NASA funds--NASA funding may not be used for foreign research efforts at any level, whether as a collaborator or a subcontract. The direct purchase of supplies and/or services, which do not constitute research, from non-U.S. sources by U.S. award recipients is permitted. Additionally, in accordance with the National Space Transportation Policy, use of a non-U.S. manufactured launch vehicle is permitted only on a no-exchange-of-funds basis.

L. Security. Proposals should not contain security classified material. If the research requires access to or may generate security classified information, the submitter will be required to comply with Government security regulations.

M. Current Support. For other current projects being conducted by the principal investigator, provide title of project, sponsoring agency, and ending date.

N. Special Matters.

(1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current Government-wide guidelines.

(2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and administrative contracting officer, when applicable.

O. Renewal Proposals.

(1) Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. A renewal proposal should not repeat all of the information that was in the original proposal. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

(2) NASA may renew an effort either through amendment of an existing contract or by a new award.

P. Length. Unless otherwise specified in the NRA, effort should be made to keep proposals as brief as possible, concentrating on substantive material. Few proposals need exceed 15-20 pages. Necessary detailed information, such as reprints, should be included as attachments. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments.

Q. Joint Proposals.

(1) Where multiple organizations are involved, the proposal may be submitted by only one of them. It should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

(2) Where a project of a cooperative nature with NASA is contemplated, describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. The proposal must be confined only to that which the proposing organization can commit itself. "Joint" proposals which specify the internal arrangements NASA will actually make are not acceptable as a means of establishing an agency commitment.

R. Late Proposals. Proposals or proposal modifications received after the latest date specified for receipt may be considered if a significant reduction in cost to the Government is probable or if there are significant technical advantages, as compared with proposals previously received.

S. Withdrawal. Proposals may be withdrawn by the proposer at any time before award. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

T. Evaluation Factors.

(1) Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost.

(2) Evaluation of a proposal's relevance to NASA's objectives includes the consideration of the potential contribution of the effort to NASA's mission.

(3) Evaluation of its intrinsic merit includes the consideration of the following factors of equal importance:

(4) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

(5) Offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

(6) The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives.

(7) Overall standing among similar proposals and/or evaluation against the state-of-the-art.

(8) Evaluation of the cost of a proposed effort may include the realism and reasonableness of the proposed cost and available funds.

U. Evaluation Techniques. Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house, others are evaluated by a combination of in-house and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), such as by mail or through assembled panels. The final decisions are made by a NASA selecting official. A proposal which is scientifically and programmatically meritorious, but not selected for award during its initial review, may be included in subsequent reviews unless the proposer requests otherwise.

V. Selection for Award.

(1) When a proposal is not selected for award, the proposer will be notified. NASA will explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

(2) When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation. The contracting officer may request certain business data and may forward a model award instrument and other information pertinent to negotiation.

W. Additional Guidelines Applicable to Foreign Proposals and Proposals Including Foreign Participation.

(1) NASA welcomes proposals from outside the U.S. However, foreign entities are generally not eligible for funding from NASA. Therefore, proposals from foreign entities should not include a cost plan unless the proposal involves collaboration with a U.S. institution, in which case a cost plan for only the participation of the U.S. entity must be included (unless otherwise noted in the NRA). Proposals from foreign entities and proposals from U.S. entities that include foreign participation must be endorsed by the respective government agency or funding/sponsoring institution in the country from which the non-U.S. participant is proposing. Such endorsement should indicate that the proposal merits careful consideration by NASA, and if the proposal is selected, sufficient funds will be made available to undertake the activity as proposed.

(2) When a "Notice of Intent" to propose is required, prospective foreign proposers should write directly to the NASA official designated in the NRA and send a copy of this letter to NASA's Office of External Relations at the address in paragraph (l)(3) of this provision.

(3) In addition to sending the requested number of copies of the proposal to the designated address, one copy of the proposal, along with the Letter of Endorsement from the sponsoring non-U.S. government agency or funding/sponsoring institution must be forwarded to:

National Aeronautics and Space Administration
Code I
Office of External Relations
(NRA Number)
Washington, DC 20546-0001
USA

(4) All foreign proposals must be typewritten in English and comply with all other submission requirements stated in the NRA. All foreign proposals will undergo the same evaluation and selection process as those originating in the U.S. All proposals must be received before the established closing date. Those received after the closing date will be treated in accordance with paragraph (g) of this provision. Sponsoring foreign government agencies or funding institutions may, in exceptional situations, forward a proposal without endorsement to the above address if endorsement is not possible before the announced closing date. In such cases, NASA's Office of External Relations should be advised when a decision on endorsement can be expected.

(5) Successful and unsuccessful non-U.S. proposers will be contacted directly by the NASA sponsoring office. Copies of these letters will be sent to the sponsoring government agency or funding institution. Should a foreign proposal or a U.S. proposal with foreign participation be selected, NASA's Office of External Relations will arrange with the foreign sponsoring agency or funding institution for the proposed participation on a no-exchange-of-funds basis, in which NASA and the non-U.S. sponsoring agency or funding institution will each bear the cost of discharging their respective responsibilities.

(6) Depending on the nature and extent of the proposed cooperation, this arrangement may entail:

- (i) A letter of notification by NASA;
- (ii) An exchange of letters between NASA and the sponsoring foreign governmental agency; or
- (iii) A formal Agency-to-Agency Memorandum of Understanding (MOU).
- (iv) Cancellation of NRA. NASA reserves the right to make no awards under this NRA and to cancel this NRA. NASA assumes no liability for canceling the NRA or for anyone's failure to receive actual notice of cancellation.

Appendix E

FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA) CERTIFICATIONS, DISCLOSURES, AND ASSURANCES PURSUANT TO LOBBYING, DEBARMENT & SUSPENSION, NONDISCRIMINATION AND DRUG-FREE WORKPLACE

A. LOBBYING

As required by Section 1352, Title 31 of the US Code, and implemented at 14 CFR Part 1271, as defined at 14 CFR Subparts 1271.110 and 1260.117, with each submission that initiates Agency consideration of such applicant for award of a Federal contract, grant, or cooperative agreement exceeding \$100,000, the applicant must certify that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit a Standard Form-LLL, Disclosure Form to Report Lobbying, in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

B. GOVERNMENTWIDE DEBARMENT AND SUSPENSION

As required by Executive Order 12549, and implemented at 14 CFR 1260.510, for prospective participants in primary covered transactions, as defined at 14 CFR Subparts 1265.510 and 1260.117,

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State

- or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

C. NONDISCRIMINATION IN FEDERALLY ASSISTED PROGRAMS

The institution, corporation, firm, or other organization on whose behalf this assurance is signed, hereinafter called Applicant, HEREBY AGREES THAT it will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352), Title IX of the Education Amendments of 1972 (20 U.S.C. 1680 et seq.), Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and the Age Discrimination Act of 1975 (42 U.S.C. 16101 et seq.), and all requirements imposed by or pursuant to the Regulation of the National Aeronautics and Space Administration (14 CFR Part 1250)(hereinafter called NASA) issued pursuant to these laws, to the end that in accordance with these laws and regulations, no person in the United States shall, on the basis of race, color, national origin, sex, handicapped condition, or age be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Applicant receives Federal financial assistance from NASA; and HEREBY GIVES ASSURANCE THAT it will immediately take any measure necessary to effectuate this agreement. If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Applicant by NASA, this assurance shall obligate the Applicant, or in the case of any transfer of such property, and transferee, for the period during which the real property or structure is used for a purpose for which the Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance shall obligate the Applicant for the period during which it retains ownership or possession of the property. In all other cases, this assurance shall obligate the Applicant for the period during which the Federal financial assistance is extended to it by NASA. THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Applicant by NASA, including installment payments after such date on account of applications for Federal financial assistance which were approved before such date. The applicant recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, its successors, transferees, and assignees, and the person or persons whose signatures appear below are authorized to sign on behalf of the Applicant.

APPENDIX F

REQUIRED FORMS

F-1 Proposal Cover Page

F-2 Proposal Data

F-3 Proposal Abstract

F-4 Certification of Institution and Principal Investigator Eligibility

F-5 Principal Investigator Supplementary Information

F-6 Human Resources

F-7 Budget Request Summary

F-8 Proposal Equipment List

FORM F-1

FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA) PROPOSAL COVER PAGE

For NASA Use Only			
<div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; padding: 0 5px;"> Proposal Number Date Received </div>			
Name of Submitting Institution :		Congressional District:	
Proposal Title: <u>Certification of Compliance with Applicable Executive Orders and US Code</u> By submitting the proposal identified in this <i>Proposal Cover Page</i> in response to the NRA, the Authorizing Official of the proposing institution or the individual proposer hereby: <ul style="list-style-type: none"> Certifies that the statements made in this proposal are true and complete to the best of his/ her knowledge; Agrees to accept the obligations to comply with NASA award terms and conditions if an award is made as a result of this proposal; and Confirms compliance with all provisions, rules, and stipulations set forth in the three Certifications contained in this NRA [namely, (I) <i>Certification Regarding Debarment, Suspension, and Other Responsibility Matters Primary Cover Transactions</i>, (ii) <i>Certification Regarding Lobbying</i>, and (iii) <i>Certification of Compliance with the NASA Regulations Pursuant to Nondiscrimination in Federally Assisted Programs</i>]. Willful provision of false information in this proposal and/or its supporting documents, or in reports required under an ensuing award, is a criminal offense (US Code, Title 18, Section 1001).			
Principal Investigator - Name		Authorized Institutional Official - Name	
Title		Title	
Department		Department	
Mailing Address		Mailing Address	
City	State	City	State
Zip		Zip	
Telephone Number		Telephone Number	
Fax Number		Fax Number	
E-mail Address		E-mail Address	
Principal Investigator - Signature		Authorized Institutional Official - Signature	

Date

Date

FORM F-2

**FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA)
PROPOSAL DATA**

Strategic Enterprise or NASA Center individual who has expressed specific interest in this proposal (optional)

(a) Name _____

(b) Telephone _____

Budget Summary by Federal Government Fiscal Year

	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Requested NASA Funding				
Cost-Sharing (if applicable)				
Total Project Resources				

Indicate one or more Strategic Enterprise(s) that the research supports.

Earth Science	
Space Science	
Aero - Space Transportation Technology	
Human Exploration and Development of Space (HEDS)	

FY 2000 INSTITUTIONAL RESEARCH AWARDS (IRA) PROPOSAL ABSTRACT

1. Proposal Title _____
2. Principal Investigator Name _____
3. Institution _____
4. Abstract of Proposed Research (200-300 words)

[illegible]

FORM F-4

**FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA)
CERTIFICATION OF INSTITUTION AND PRINCIPAL INVESTIGATOR ELIGIBILITY**

Submit one copy of this form with the original proposal. Do not include this form with any of the other copies, as this may compromise the confidentiality of the information. Completion of this form is required.

I. Institutional Eligibility Certification

1. Institution Name _____

2. Proposal Title _____

3. Identify highest degree offered (e.g., MS, or Ph.D.) by the institution in Science Mathematics, Engineering or Technology:

Major _____ Highest Degree _____

Major _____ Highest Degree _____

Major _____ Highest Degree _____

Major _____ Highest Degree _____

4. Check the Department of Education Minority Institution Designation.

____ Designated Hispanic-Serving Institution

____ Designated Historically Black College or University

____ Designated Tribal College or University

II. Principal Investigator Eligibility Certification

1. Last Name _____ First Name _____ MI _____

2. Verification of Employment:

Employed by (institution): _____

School/Department (specify): _____

Check type of position

____ Tenured ____ Tenured-track ____ Full Time Contractual

3. U.S. Citizen ☐ Yes ☐ No

4. Is Principal Investigator a recipient of a PhD degree?

____ Yes ____ No

If yes, specify area: engineering, mathematics, science, etc. _____

III. FY 1999 NASA Funding

1. List all NASA awards, NASA contracts and NASA consulting from which the proposing Department received funding in FY 1999.

Column A	Column B	Column C	Column D	Column E
Award	PI or CO-I	Title of Award	Period (from - to)	Amount
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			/ / to / /	
			TOTAL FUNDING:	

Instructions:

- Column A:** Identify whether award was for research (R), education (E), contract (C), or consulting agreement (A).
- Column B:** For each award indicate whether applicant was a PI or CO-I.
- Column C:** List title of award.
- Column D:** List the period of performance.
- Column E:** List amount of award. For awards on which the proposed PI was a CO-I, show only that portion of the award that supported the proposed PI's personal research, and attach an explanation of how this was determined. For awards on which the proposed PI was the PI, show the total award amount.

Certification Authority

The person authorized to sign below certifies that the information provided is accurate.
Authorized Institutional Official (typed)

Title _____

Authorized Institutional Official Signature _____

Form F-5

Human Resource Development**Past Performance****Chart 1 – Student Enrollment and Degrees Awarded in Departments Covered by the Proposal in Academic Year (AY) 1998-1999**

Institution

Enrollments – AY 1998-1999

Department	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)

Degrees Awarded – AY 1998-1999

Department	Degrees Awarded	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)
	Bachelors				
	Masters				
	Ph.D.'s				

Form F-5

Human Resource Development

Planned Performance Year 1

Chart 2 – Projected Increase in Enrollment and Degrees Awarded

Designate AY: _____

Institution _____

Projected Enrollments

Department	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)

Projected Number of Degrees To Be Awarded

Department	Degrees Awarded	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)
	Bachelors				
	Masters				
	Ph.D.'s				

Form F-5

Human Resource Development**Planned Performance Year 2****Chart 3 – Projected Increase in Enrollment and Degrees Awarded**

Designate AY:_____.

Institution

Projected Enrollments

Department	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)

Projected Number of Degrees To Be Awarded

Department	Degrees Awarded	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)
	Bachelors				
	Masters				
	Ph.D.'s				

Form F-5

Human Resource Development**Planned Performance Year 3****Chart 4 – Projected Increase in Enrollment and Degrees Awarded**

Designate AY: _____

Institution _____

Projected Enrollments

Department	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)

Projected Number of Degrees To Be Awarded

Department	Degrees Awarded	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)
	Bachelors				
	Masters				
	Ph.D.'s				

Form F-5

Human Resource Development**Planned Performance Year 4****Chart 5 – Projected Increase in Enrollment and Degrees Awarded**

Designate AY: _____

Institution _____

Projected Enrollments

Department	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)

Projected Number of Degrees to be Awarded

Department	Degrees Awarded	Total Enrollment Number	U.S. Citizens (# and %)	Individuals W/Disabilities (# and %)	Number Of Minorities (# and %)
	Bachelors				
	Masters				
	Ph.D.'s				

FORM F-6

**FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA)
BUDGET REQUEST SUMMARY**

Institution Name _____

Proposal Title _____

From _____ to _____

	RECIPIENT'S COST A	NASA USE ONLY B	C
1. Direct Labor (salaries, wages, and fringe benefits)	_____	_____	_____
2. Other Direct Costs	_____	_____	_____
a. Subcontracts	_____	_____	_____
b. Consultants	_____	_____	_____
c. Equipment	_____	_____	_____
d. Supplies	_____	_____	_____
e. Travel	_____	_____	_____
f. Other	_____	_____	_____
3. Indirect Costs	_____	_____	_____
4. Other Applicable Costs	_____	_____	_____
5. SUBTOTAL - Estimated Costs	_____	_____	_____
6. Less Proposed Cost Sharing (if any)	_____	_____	_____
7. Carryover Funds (if any)	XXXXXXXXXXXXX	XXXXXXXXXXXXX	XXXXXXXXXXXXX
a. Anticipated Amount xxxxxxxxx			
b. Amount used to reduce budget	XXXXXXXXXXXXX	XXXXXXXXXXXXX	XXXXXXXXXXXXX
8. TOTAL ESTIMATED COST	_____	_____	XXXXXXXXXXXXX
APPROVED BUDGET	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____

Instructions

- (1) Provide a complete budget summary sheet for year one and separate estimates for each subsequent year.
- (2) Recipient's estimated costs should be entered in Column A, Columns B and C are for NASA use only. Column C represents the approved award budget.
- (3) Provide as attachments detailed computations of estimates in each cost category with narratives required to fully explain proposed costs.

FORM F-6
PAGE 2

FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA)
GENERAL BUDGET INSTRUCTIONS

1. Direct Labor (salaries, wages, and fringe benefits): Attachments should list number and titles of personnel, amount of time to be devoted to the award, and rates of pay.
2. Other Direct Costs:
 - (i) Subcontracts: Attachments should describe the work to be subcontracted, estimated amount, recipient (if known), and the reason for subcontracting.
 - (ii) Consultants: Identify consultants to be used, why they are necessary, the time they will spend on the project, and rates of pay (not to exceed the equivalent of the daily rate for Level IV of the Executive Schedule, exclusive of expense and indirect costs).
 - (iii) Equipment: List separately. Explain the need for items costing more than \$5,000. Describe basis for estimated cost. General-purpose equipment is not allowable as a direct cost unless specifically approved by the contracting officer. Any equipment purchase requested to be made as a direct charge under this award must include the equipment description, how it will be used in the conduct of the basic research proposed and why it cannot be purchased with indirect funds.
 - (iv) Supplies: Provide general categories of needed supplies, the method of acquisition, estimated cost.
 - (v) Travel: Describe the purpose of the proposed travel in relation to the award and provide the basis of estimate, including information on destination and number of travelers where known.
 - (vi) Other: Enter the total of direct costs not covered by 2a through 2e. Attach an itemized list explaining the need for each item and the basis for the estimate. Enter the student stipends (number of students x amount of stipend for each).
3. Indirect Costs: Identify indirect cost rate(s) and base(s) as approved by the cognizant Federal agency, including the effective period of the rate. Provide the name, address, and telephone number of the Federal agency and official having cognizance. If unapproved rates are used, explain why, and include the computational basis for the indirect expense pool and corresponding allocation base for each rate.
4. Other Applicable Costs: Enter total of other applicable costs with an itemized list explaining the need for each item and basis for the estimate.
5. Subtotal-Estimated Costs: Enter the sum of items 1 through 4.
6. Less Proposed Cost Sharing (if any): Enter any amount proposed. If cost sharing is based on specific cost items, identify each item and amount in an attachment.
7. Carryover Funds (if any): Enter the dollar amount of any funds that are expected to be available for carryover from the prior budget period. Identify how the funds will be used if they are not used to reduce the budget. NASA officials will decide whether to use all or part of the anticipated carryover to reduce the budget. Not applicable to 2nd-year and subsequent-year budgets submitted for the award of a multiple year awards.

8. Total Estimated Costs: Enter the total after subtracting items 6 and 7b from item 5.

FORM F-7

**FY2000 INSTITUTIONAL RESEARCH AWARDS (IRA)
EQUIPMENT LIST**

ITEM	QUANTITY	UNIT PRICE	BASIS	TOTAL COST	J
(Descriptive name, probable brand, and model)			(Discounted)		

Total Equipment

Non-NASA Contrib

Cost to NASA